CLAIMS

1. A curable composition which contains

(A) an organic compound containing at least two carbon-carbon double bonds reactive with a SiH group in each molecule,

(B) a compound having at least two SiH groups in each molecule,

(C) a hydrosilylation catalyst,

(D) a silane coupling agent and/or an epoxy group-containing compound, and

(E) a silanol condensation catalyst.

2. The curable composition according to Claim 1, wherein the component (E) is an organoaluminum compound and/or a borate ester.

3. The curable composition according to Claim 1 or 2, wherein the component (D) is a silane coupling agent having at least one functional group selected from the group consisting of epoxy, methacryl, acryl, isocyanate, isocyanurate, vinyl and carbamate group and hydrolyzable silyl group in each molecule.

4. The curable composition according to Claim 1 or 2, wherein the component (D) is a silane coupling agent having an epoxy group and a hydrolyzable silyl group in each molecule.

5. The curable composition according to any one of Claims 1 to 4,

wherein the component (E) is an aluminum chelate compound and/or an aluminum alcoholate compound.

6. The curable composition according to any one of Claims

1 to 4,

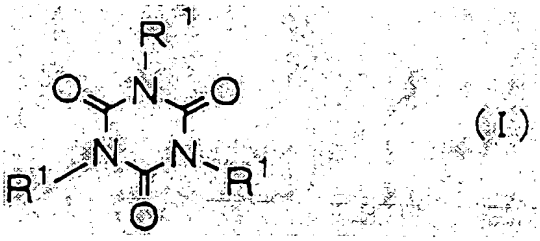
wherein the component (E) is at least one species selected from the group consisting of aluminum ethyl acetoacetate diisopropylate, aluminum ethyl acetoacetate diisobutylate, aluminum tris(ethyl acetoacetate), aluminum bis(ethyl acetoacetate) monoacetylacetonate, and aluminum tris(acetylacetonate).

7. The curable composition according to any one of Claims 1 to 4,

wherein the component (E) is at least one species selected from the group consisting of trinormaloctadecyl borate, trinormaloctyl borate, trinormalbutyl borate, triisopropyl borate, trinormalpropyl borate, triethyl borate and trimethyl borate.

8. The curable composition according to any one of Claims 1 to 7,

wherein the component (A) is a compound represented by the following general formula (I):



(I)

in the formula, each R^1 represents a univalent organic group containing 1 to 50 carbon atoms and each R^1 group may be the same or different.

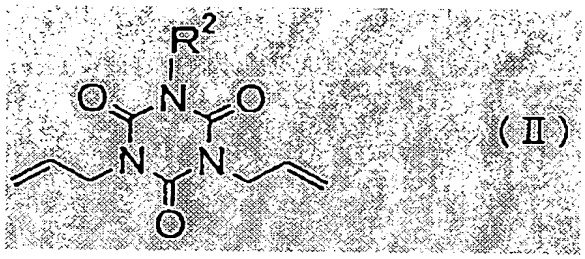
9. The curable composition according to any one of Claims 1 to 7,

wherein the component (A) is triallyl isocyanurate and the component (B) is a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and triallyl

isocyanurate.

10. The curable composition according to any one of Claims 1 to 7,

which contains a compound represented by the following general formula (II) as the component (A):



(II)

in the formula, R^2 represents a hydrogen atom, or an organic group which does not contain a functional group subjectable to hydrosilylation reaction.

11. The curable composition according to Claim 10,

which further contains triallyl isocyanurate as the component (A).

12. The curable composition according to Claim 10 or 11,

wherein R^2 represents a hydrogen atom, or a univalent organic group containing 1 to 50 carbon atoms.

13. The curable composition according to any one of Claims 10 to 12,

wherein the compound represented by the general formula (II) accounts for 20% by weight or more in the component (A).

14. The curable composition according to any one of Claims 11 to 13,

wherein the compound represented by the general formula (II) is diallyl monoglycidyl isocyanurate.

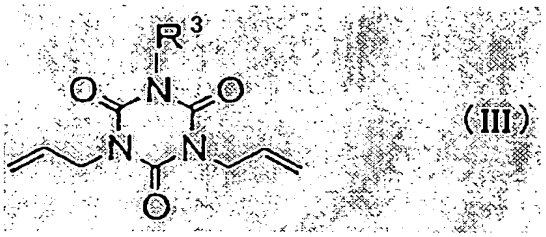
15. The curable composition according to Claim 14,

wherein the component (B) is a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and triallyl isocyanurate.

16. The curable composition according to any one of Claims 1 to 15,

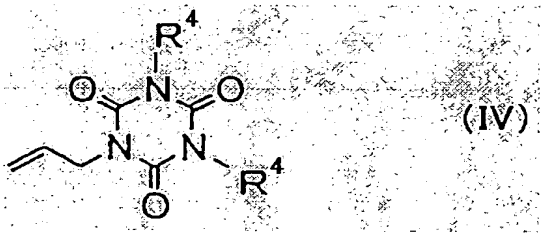
wherein the component (B) contains

a compound obtainable by hydrosilylation reaction between a compound represented by the following general formula (III):



in the formula, R^3 represents a hydrogen atom, or an organic group which does not contain a functional group subjectable to hydrosilylation reaction: and a compound having at least two SiH groups in each molecule, and/or

a compound obtainable by hydrosilylation reaction between a compound represented by the following general formula (IV):



in the formula, R^4 represents a hydrogen atom, or an organic group which does not contain a functional group subjectable to hydrosilylation reaction, and each R^4 may be the same or different: and a compound having at least three SiH groups in each molecule.

17. The curable composition according to Claim 16,

wherein R^3 and R^4 represent hydrogen atoms or univalent organic groups containing 1 to 50 carbon atoms.

18. The curable composition according to Claim 16, wherein the component (B) contains a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and diallyl monoglycidyl isocyanurate, and/or a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and monoallyl diglycidyl isocyanurate.

19. The curable composition according to Claim 16, wherein the component (B) contains a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and diallyl monoglycidyl isocyanurate, and/or a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and monoallyl diglycidyl isocyanurate as exclusive constituents.

20. The curable composition according to any one of Claims 16 to 19, wherein the component (A) is triallyl isocyanurate.

21. The curable composition according to any one of Claims 16 to 19, wherein the component (A) is a mixture of triallyl isocyanurate and diallyl monoglycidyl isocyanurate.

22. A curing product which is obtainable by curing the curable composition according to any one of Claims 1 to 21.

23. A process for producing a curing product which comprises curing the curable composition according to any one of Claims 1 to 21.

24. A light-emitting diode

which is sealed with the curing product according to Claim 22.

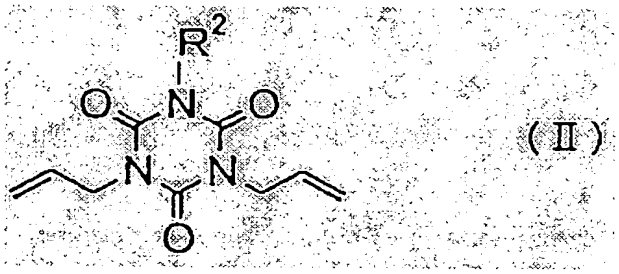
25. A curable composition which contains

(A) an organic compound containing at least two carbon-carbon double bonds reactive with a SiH group in each molecule,

(B) a compound having at least two SiH groups in each molecule, and

(C) a hydrosilylation catalyst,

in which a compound represented by the following general formula (II):



(II)

in the formula, R^2 represents a hydrogen atom, or an organic group which does not contain a functional group subjectable to hydrosilylation reaction: is contained as the component (A).

26. The curable composition according to Claim 25,

which further contains triallyl isocyanurate as the component (A).

27. The curable composition according to Claim 25 or 26,

wherein R^2 represents a hydrogen atom, or a univalent organic group containing 1 to 50 carbon atoms.

28. The curable composition according to any one of Claims 25 to 27,

wherein the compound represented by the general formula (II) accounts for 20% by weight or more in the component (A).

29. The curable composition according to any one of Claims 26 to 28,

wherein the compound represented by the general formula (II) is diallyl monoglycidyl isocyanurate.

30. The curable composition according to Claim 29,

wherein the component (B) is a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and triallyl isocyanurate.

31. A curing product

which is obtainable by curing the curable composition according to any one of Claims 25 to 30.

32. A process for producing a curing product

which comprises curing the curable composition according to any one of Claims 25 to 30.

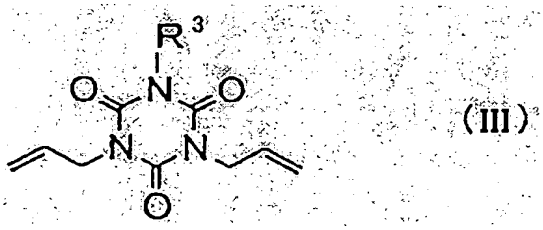
33. A curable composition which contains

(A) an organic compound containing at least two carbon-carbon double bonds reactive with a SiH group in each molecule,

(B) a compound having at least two SiH groups in each molecule, and

(C) a hydrosilylation catalyst,

in which the component (B) contains a compound obtainable by hydrosilylation reaction between a compound represented by the following general formula (III):

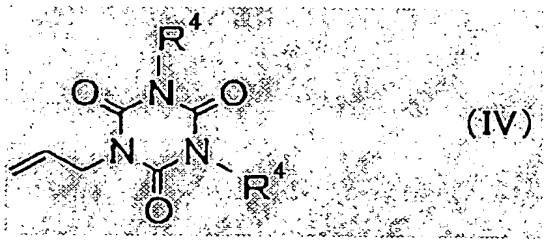


(III)

in the formula, R^3 represents a hydrogen atom, or an organic

group which does not contain a functional group subjectable to hydrosilylation reaction: and a compound having at least two SiH groups in each molecule, and/or

a compound obtainable by hydrosilylation reaction between a compound represented by the following general formula (IV):



(IV)

in the formula, R^4 represents a hydrogen atom, or an organic group which does not contain a functional group subjectable to hydrosilylation reaction, and each R^4 may be the same or different: and a compound having at least three SiH groups in each molecule.

34. The curable composition according to Claim 33, wherein R^3 and R^4 represent hydrogen atoms, or univalent organic groups containing 1 to 50 carbon atoms.

35. The curable composition according to Claim 33, wherein the component (B) contains a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and diallyl monoglycidyl isocyanurate, and/or 1,3,5,7-tetramethylcyclotetrasiloxane and monoallyl diglycidyl isocyanurate.

36. The curable composition according to Claim 33, wherein the component (B) contains a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and diallyl monoglycidyl isocyanurate, and/or a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and monoallyl diglycidyl isocyanurate as exclusive constituents.

37. The curable composition according to any one of Claims 33 to 36,

wherein the component (A) is triallyl isocyanurate.

38. The curable composition according to any one of Claims 33 to 36,

wherein the component (A) is a mixture of triallyl isocyanurate and diallyl monoglycidyl isocyanurate.

39. A curing product

which is obtainable by curing the curable composition according to any one of Claims 33 to 38.

40. A process for producing a curing product

which comprises curing the curable composition according to any one of Claims 33 to 38.

41. A light-emitting diode

which comprises a light emitting element, a substrate on the top surface of which is formed with an external electrode to be disposed with said light emitting element, and a sealing member disposed adjacently onto said substrate,

the contact surface between said electrode and said sealing member being 50 to 90% when the contact surface between said substrate and said sealing member is set at 100%, and

said sealing member being a curing product obtainable from a curable composition containing

(A) an organic compound containing at least two carbon-carbon double bonds reactive with a SiH group in each molecule,

(B) a compound having at least two SiH groups in each molecule,

(C) a hydrosilylation catalyst,

(D) a silane coupling agent and/or an epoxy group-containing compound, and

(E) a silanol condensation catalyst.

42. The light emitting diode according to Claim 41, wherein the substrate is formed from a composition containing a semicrystalline polymer resin.

43. A light-emitting diode

which comprises a light emitting element, a package comprising an aperture having a bottom surface to be disposed with said light emitting element and sidewalls, and a sealing member for sealing said aperture,

said package being formed of a molding resin by a monolithic process with one end of the external electrode being exposed on said aperture bottom,

the area of said external electrode on said aperture bottom being 50 to 90% when the surface area of said aperture bottom is set at 100%

and said sealing member being a curing product obtainable from a curable composition containing

(A) an organic compound containing at least two carbon-carbon double bonds reactive with a SiH group in each molecule,

(B) a compound having at least two SiH groups in each molecule,

(C) a hydrosilylation catalyst,

(D) a silane coupling agent and/or an epoxy group-containing compound, and

(E) a silanol condensation catalyst.

44. The light-emitting diode according to Claim 43, wherein the package is formed of a molding resin by a monolithic process with the respective ends of an external positive electrode and an external negative electrode being exposed at a predetermined distance on the aperture bottom,

and said respective exposed external electrode on said

aperture bottom having at least one pair of resin exposure parts of the molding resin of the package.

45. The light-emitting diode according to Claim 43 or 44,

wherein the molding resin of the package is a composition containing a semicrystalline polymer resin.

46. The light-emitting diode according to any one of Claims 41 to 45,

wherein the component (D) is a silane coupling agent having at least one functional group selected from the group consisting of epoxy, methacryl, acryl, isocyanate, isocyanurate, vinyl and carbamate group and a hydrolyzable silyl group in each molecule.

47. The light-emitting diode according to any one of Claims 41 to 46,

wherein the component (E) is an organoaluminum compound and/or a borate ester.

48. The light-emitting diode according to any one of Claims 41 to 46,

wherein the component (E) is at least one species selected from the group consisting of aluminum ethyl acetoacetate diisopropylate, aluminum ethyl acetoacetate diisobutylate, aluminum tris(ethyl acetoacetate), aluminum bis(ethyl acetoacetate) monoacetylacetonate, and aluminum tris(acetylacetonate).

49. The light-emitting diode according to any one of Claims 41 to 46,

wherein the component (E) is at least one species selected from the group consisting of trinormaloctadecyl borate, trinormaloctyl borate, trinormalbutyl borate, triisopropyl

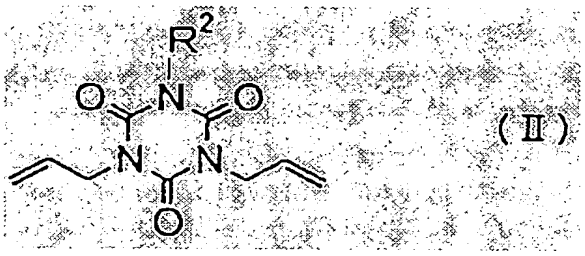
borate, trinormalpropyl borate, triethyl borate and trimethyl borate.

50. The light-emitting diode according to any one of Claims 41 to 49,

wherein the component (A) is triallyl isocyanurate and the component (B) is a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and triallyl isocyanurate.

51. The light-emitting diode according to any one of Claims 41 to 49,

wherein the curable composition contains a compound represented by the following general formula (II) as the component (A):



in the formula, R^2 represents a hydrogen atom, or an organic group which does not contain a functional group subjectable to hydrosilylation reaction.

52. The light-emitting diode according to Claim 51,

wherein the curable composition further contains triallyl isocyanurate as the component (A).

53. The light-emitting diode according to Claim 51 or 52,

wherein the compound represented by the general formula (II) accounts for 20% by weight or more in the component (A).

54. The light-emitting diode according to any one of

Claims 51 to 53,

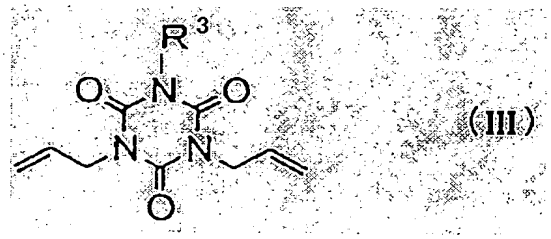
wherein the compound represented by the general formula (II) is diallyl monoglycidyl isocyanurate.

55. The light-emitting diode according to Claim 54,

wherein the component (B) is a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and triallyl isocyanurate.

56. The light-emitting diode according to any one of Claims 41 to 54,

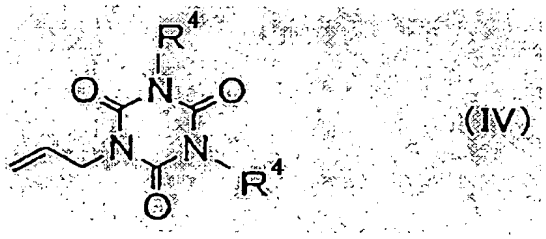
wherein the component (B) contains a compound obtainable by hydrosilylation reaction between a compound represented by the following general formula (III):



(III)

in the formula, R^3 represents a hydrogen atom, or an organic group which does not contain a functional group subjectable to hydrosilylation reaction: and a compound having at least two SiH groups in each molecule, and/or

a compound obtainable by hydrosilylation reaction between a compound represented by the following general formula (IV):



(IV)

in the formula, R^4 represents a hydrogen atom, or an organic group which does not contain a functional group subjectable to hydrosilylation reaction and each R^4 may be the same or

different: and a compound having at least three SiH groups in each molecule.

57. The light-emitting diode according to Claim 56, wherein the component (B) contains a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and diallyl monoglycidyl isocyanurate, and/or a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and monoallyl diglycidyl isocyanurate.

58. The light-emitting diode according to Claim 56, wherein the curable composition contains, as the component (B), a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and diallyl monoglycidyl isocyanurate, and/or a reaction product from 1,3,5,7-tetramethylcyclotetrasiloxane and monoallyl diglycidyl isocyanurate as exclusive constituents.

59. The light-emitting diode according to any one of Claims 56 to 58, wherein the component (A) is triallyl isocyanurate.

60. The light-emitting diode according to any one of Claims 56 to 58, wherein the component (A) is a mixture of triallyl isocyanurate and diallyl monoglycidyl isocyanurate.

61. A light-emitting diode which comprises a light emitting element, a package comprising an aperture having a bottom surface to be disposed with said light emitting element and sidewalls, and a sealing member for sealing said aperture, said package being formed of a molding resin by a monolithic process with one end of the external electrode being exposed on said aperture bottom,

the area of said external electrode on said aperture bottom being 50 to 90% when the surface area of said aperture bottom is set at 100%

and said sealing member containing the curing product according to Claim 31 or 39.

62. The light-emitting diode according to Claim 61,

wherein the package is formed of a molding resin by a monolithic process with the respective ends of an external positive electrode and an external negative electrode being exposed at a predetermined distance on the aperture bottom,

and said respective exposed external electrode on said aperture bottom having at least one pair of resin exposure parts of the molding resin of the package.

63. The light-emitting diode according to Claim 61 or 62,

wherein the molding resin of the package is a composition containing a semicrystalline polymer resin.